

THE CYPERACEAE COLLECTED IN NEW GUINEA
BY L. J. BRASS, I*

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With four text-figures

THIS is the first contribution to an account of the specimens of Cyperaceae collected in New Guinea chiefly by Mr. L. J. Brass during the Archbold Expeditions between 1933 and 1939. Included also in the treatment are some other specimens from New Guinea and the Solomon Islands from various collections. I am particularly grateful to Prof. Elmer D. Merrill, of the Arnold Arboretum, for the opportunity to study the Brass collection, and to Dr. Lily M. Perry for copies of much literature unavailable to me. To Mr. A. J. Jessep and Mr. J. H. Willis I am indebted for the loan of specimens and literature from the National Herbarium of Victoria, Melbourne (cited as herb. Melbourne), and to Mr. W. Hartley for the loan of a set of the specimens collected by Mr. C. E. Carr, now in the herbarium of the Council for Scientific and Industrial Research, Canberra (cited as herb. Canberra).

Unless otherwise indicated, the type-specimens of new species are in the Queensland Herbarium, Brisbane (herb. Brisbane) and duplicate-types in the Gray Herbarium of Harvard University, Cambridge, Mass.

The present paper deals with the genus *Carex*, and in this genus I have received valuable help from Mr. E. Nelmes, of the Herbarium, Royal Botanic Gardens, Kew, England, who has been studying the Malaysian and Australasian species of the genus for some years. The arrangement of species here follows that in Kükenthal's well-known monograph in *Das Pflanzenreich* IV.20. 1909, but some variations of his treatment have been found necessary at this later date. The specimens have been critically compared with copious Australian material, but the comparison with Malaysian material has been much less extensive and considerable reliance has had to be placed on descriptions alone.

Carex L.

Subgen. **Primocarex** Kükenth.

Carex eremostachya sp. nov. (Sect. *Circinatae* Meinsh. sensu Kükenth.). FIG. 1, A.

Rhizoma repens circiter 1.5 mm. crassum squamis tenuibus brunneis opacis tenuiter striatis obtectum. Culmi approximati vel laxe caespitosi,

* Botanical Results of the Richard Archbold Expeditions.

circiter 20–25 cm. alti, graciles flaccidulique, acute triquetri admodum compressi, scabri. Folia pauca culmum superantia, inferiora ad vaginas brunneas integras redacta, 3–4 superiora laminifera; laminae acutae, usque ad 20 cm. longae, 2–2.5 mm. latae, planae, glabrae, inferne laeves sursum nervis marginibusque scabrae, carinatae ceterum obscure nervosae. Spica unica, erecta, androgynaecea, ebracteata, 10–12 mm. longa, 5 mm. crassa, oblonga, pluri- et densiflora, variegata, pars mascula linearis circiter 4–5 mm. longa. Glumae femineae ovatae acute acuminatae, 3.5–4 mm. longae, glabrae, dorso obtuse carinato 3-nerves, lateribus rubro-brunneae. Utriculi suberecti, 4.5 mm. longi, 1.2 mm. lati, membranacei, pallide viridescens, elliptici, rostrati, acutiuscule triquetri, glabri laevesque, prominule circiter 15-nerves, basin versus angustati brevissime stipitati, sursum in rostrum circiter 1.5 mm. longum gracile lineare triquetrum glabrum laeve ore firmo bidentatum (dentibus strictis acutis) subsensim contracti. Nux utriculo

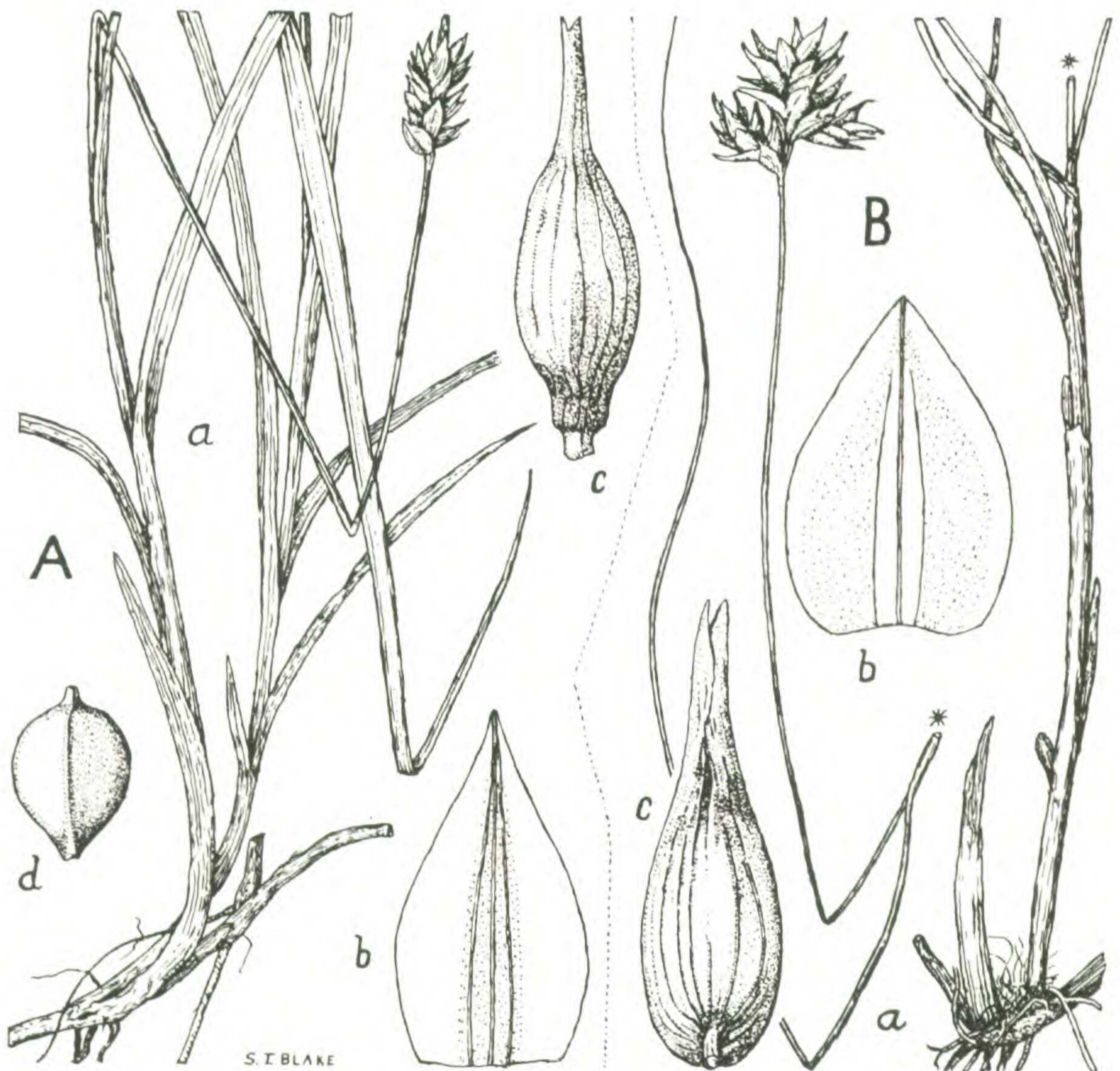


FIG. 1. A. *Carex eremostachya* S. T. Blake: a. part of plant with fruiting culm, $\times 1$; b. pistillate glume, flattened out, $\times 10$; c. utricle, dorsal view, $\times 10$; d. nut, $\times 10$. B. *Carex perileia* S. T. Blake: a. part of plant with fruiting culm, $\times 1$; b. pistillate glume, flattened out, $\times 10$; c. utricle, dorsal view, $\times 10$. All figures from type-specimens.

brevior et subaequilata, 1.8 mm. longa, 1.2 mm. lata, oblonga subobovoidea, obtusissima sed brevissime acuminato-apiculata, basi subacuta, valde triquetra angulis prominulis, lateribus fere plana. Stylus basi haud incrassatus; stigmata 3.

NETHERLANDS NEW GUINEA: 9 km. northeast of Lake Habbema, *Brass 10255* (TYPE), October 1938, alt. 2800 m., massed on open beaches of small stream in forest.

This species is most nearly allied to *C. rhizopoda* Maxim., from Japan, differing in the more densely-flowered female part of the spike with broader reddish brown (not green) glumes, the nut more obtuse at each end, and perhaps also in the shorter male part of the spike. Ohwi, in Mem. Coll. Sci. Kyoto Imper. Univ. ser. B, 11(5): 443. 1936, has erected a new section *Rhizopodae* Ohwi for *C. rhizopoda*, but *C. eremostachya* appears to agree better with the characters of the *Circinatae*, under which Kükenthal arranged *C. rhizopoda* in Pflanzenr. IV.20: 98. 1909. *C. eremostachya* also appears to be closely allied to *C. Petelotii* Gross, but to judge from the description the latter has a narrower spike but longer utricles (5–6 mm.). No mention is made of a rhizome.

Carex capillacea Boott, Illustr. 1: 44, t. 110. 1858.

Carex rara Boott subsp. *capillacea* (Boott) Kükenth. in Pflanzenr. IV.20: 102. 1909.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass 9085*, August 1938, alt. 3225 m., scattered along grassy shores of lake; 11 km. northeast of top of Mt. Wilhelmina, *Brass & Myer-Drees 9751*, Sept. 1938, alt. 3400 m., in wet grassy valley.

Not previously recorded from New Guinea; known to extend as far north as Sakhalin and Manchuria and west to Sikkim, and known to occur in southeastern Australia. *Brass 9085* has a short setaceous bract half as long as the spike.

Subgen. *Vignea* (Beauv.) Nees

Carex appressa R. Br. Prodr. 242. 1810; Kükenth. in Bot. Jahrb. 69: 261. 1938; Ohwi in Bot. Mag. Tokyo 56: 214. 1942.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass 9248*, August 1938, alt. 3225 m., gregarious on wet low shores of lake, erect in clumps to 1.5 m. high.

Previously recorded for Netherlands New Guinea by Ohwi, l. c., and for Northeast New Guinea by Kükenthal, l. c.; elsewhere known from Australia, New Zealand and its dependencies, and New Caledonia.

Carex curta Gooden. in Trans. Linn. Soc. Lond. 2: 145. 1794.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass 9037*, August 1938, alt. 3225 m., common on marshy flats; Lake Habbema, *Brass 9119*, August 1938, alt. 3225 m., moist burnt-over ground in a native camp; Lake Habbema, *Brass 9539*, August 1938, alt. 3225 m., open grassland, plentiful on wet sandy soil.

Not previously recorded for New Guinea, but widely spread in Europe, Asia, North and South America, and southeastern Australia.

This species has commonly been called *C. canescens* L., but E. S. Marshall has shown, in Jour. Bot. 45: 365. 1907, that the type of Linnaeus is a specimen of quite a different plant, commonly known as *C. Buxbaumii* Wahlenb., and that the present plant has to be called *C. curta* Gooden. This view is followed by Nelves in Proc. Linn. Soc. Lond. 155 sess.: 284.

1944. The confusion seems to have arisen with the misidentification by Lightfoot, *Fl. Scotica* 550. 1777, and has been perpetuated by such authorities as Bentham (e.g. in *Handb. Brit. Fl.* 2: 913. 1865, and in *Fl. Austral.* 7: 439. 1878), Boeckeler (in *Linnaea* 39: 122. 1875), C. B. Clarke (in *Hook. f. Fl. Brit. Ind.* 6: 706. 1894), Kükenthal (in *Pflanzenr.* IV.20: 216. 1909), Ohwi (in *Mem. Coll. Sci. Kyoto Imper. Univ.* ser. B, 11(5): 268. 1936), Mackenzie (in *N. Am. Fl.* 18: 374. 1935), and Duman (in *Catholic Univ. Am. Biol. Ser.* 36: 44. 1941). F. N. Williams, when discussing the European varieties of *Carex canescens* in *Jour. Bot.* 46: 369–376. 1909, agreed with Marshall's interpretation, but continued to use the name *C. canescens* in the traditional sense with the remark that "I think that all doubt is cleared away by citing Lightfoot as the authority." But this practice is contrary to the International Rules of Nomenclature, particularly Arts. 16, 18, 46 and 47.

Carex perileia sp. nov. (Sect. *Elongatae* Kunth). FIG. 1, B.

Rhizoma stoloniforme tenue. Culmi caespitiosi, gracillimi, compressi trigoni, striati, glabri, laeves, usque ad medium foliati, quoad visi 20 cm. alti. Folia pauca culmum superantia, flexuosa, angustissima, conduplicata (explanata circiter 1 mm. lata), marginibus superioribus scaberula, ima ad vaginas persistentes pallidas redacta. Inflorescentia subcapitata, ovata, densa, brunnea, circa 1.5 cm. longa lataque; bractee squamiformes, ima breviter aristata. Spicae 3 (quoad visae) approximatae, sessiles, gynaeandreae parte masculina perbrevis, obovatae vel oblongae, squarrosae, 7–10 mm. longae, 7–8 mm. latae. Glumae femineae ovatae, acutae, muticae vel fere muticae, carina angusta 1–3-nervi virides, lateribus enervibus brunneae vel rufo-brunneae nitidae, marginibus anguste albae subscariosae, 3–3.5 mm. longae. Utriculi patuli, 5 mm. longi, 1.4 mm. lati, fulvescentes viridi-marginati, omnino glabri laevesque, epunctulati, elliptici, membranacei, basi rotundata incrassati, plano-(subconcavo-) convexi, nervis 2 marginalibus conspicuis, nervis tenuioribus latere plano circiter 7 latere convexo circiter 10 notati, sursum in rostrum latiusculum complanatum leviter incurvum breviter bidentatum omnino laeve glabrumque purpureo-tinctum cetero utriculo subaequilongum dorso anguste sulcato profunde fissum subsensim contracti. Nux utriculorum implens, 2 mm. longa, 1.2 mm. lata, oblongo-ovata, plano-convexa. Stigmata 2.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass* 9583 (TYPE), August 1938, alt. 3225 m., marshy shores of lake.

The specimen seen has a single fruiting culm. The species is very close to some forms of *C. echinata* Murr. (*C. stellulata* Good.), but has narrower leaves and longer utricles with a relatively longer beak deeply split on the back and with entirely smooth margins. The split on the back usually appears as a narrow brown furrow, as the result of the overlapping of the edges.

Subgen. *Indocarex* Baill.

Carex Dietrichiae Boeck. in *Flora* 58: 122. 1875.

SOLOMON ISLANDS: San Cristobal: Waimamura, *Brass* 2660, August 1932, lowlands on pathways and in open swampy places in the rain-forests, plentiful (inflorescence brown).

Previously known to me with certainty only from Queensland. Kükenth, in *Pflanzenr.* IV.20: 264. 1909, regards *C. Dietrichiae* Boeck., *C. fissilis* Boott, and *C. indica* L. var. *Milnei* C. B. Clarke as synonymous, treating the group as *C. indica* var. *fissilis* (Boott) Kükenth. *Carex Dietrichiae* differs from *C. indica* L. in having shorter awns to the bracteoles, bright brown (not pallid) male glumes, and less spreading, less turgid utricles less abruptly constricted into their beaks. Mr. Nemes informs me that *C. fissilis* has much longer pistillate glumes than *C. Dietrichiae*.

I have not seen the specimens referred to *C. indica* var. *Milnei* by Ridley in *Trans. Linn. Soc. II. Bot.* 9: 247. 1916, nor those referred to *C. indica*

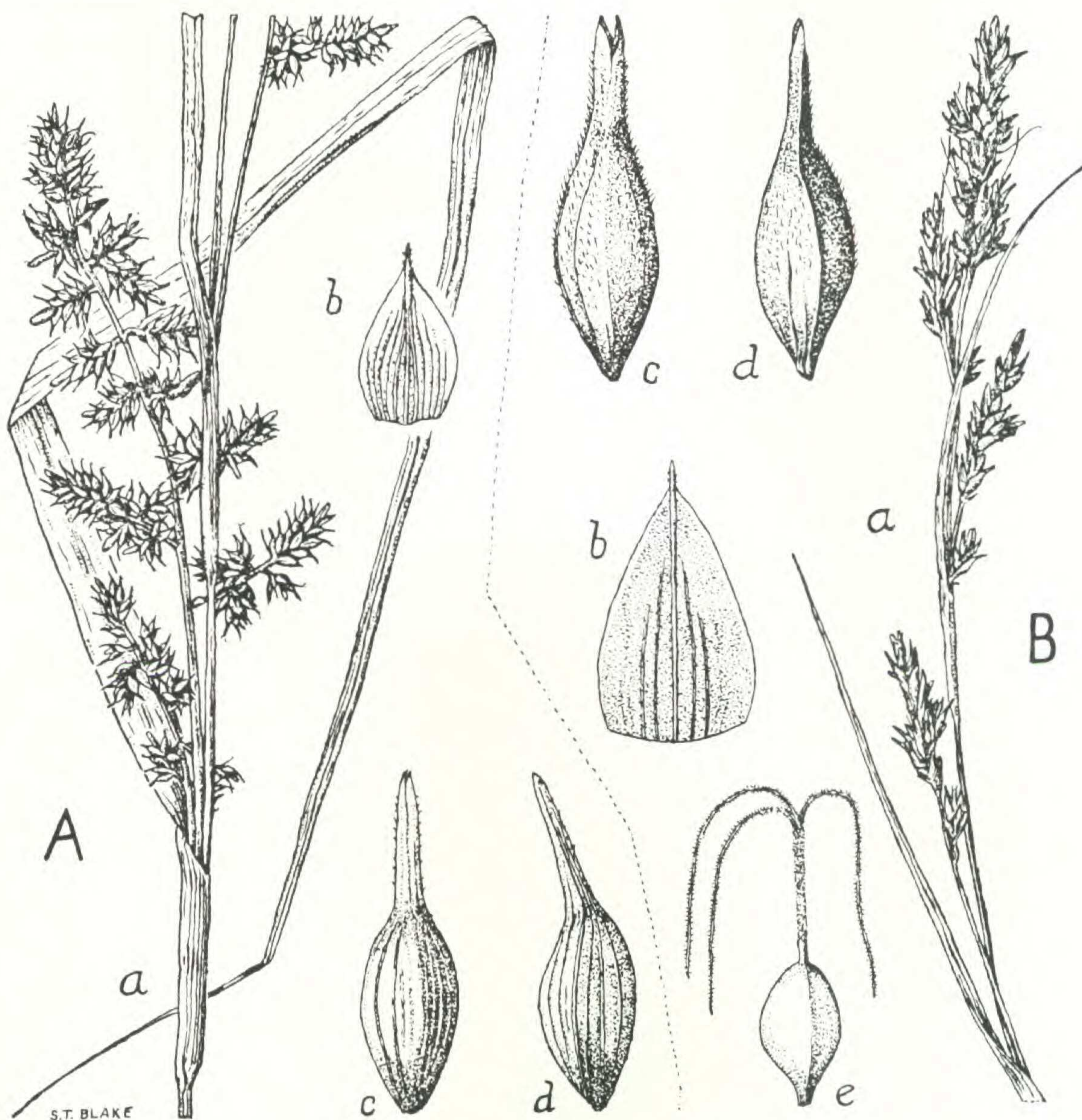


FIG. 2. A. *Carex lamprochlamys* S. T. Blake: a. part of middle region of inflorescence, $\times 1$; b. pistillate glume, flattened out; $\times 10$; c, d. utricle, dorsal and lateral views, $\times 10$. B. *Carex melanophora* S. T. Blake: a. upper part of inflorescence, $\times 1$; b. pistillate glume, flattened out, $\times 10$; c, d. utricle, dorsal and lateral views, $\times 10$; e. nut with style, $\times 10$. All figures from type-specimens.

var. *fissilis* by Kükenthal in Bot. Jahrb. 59: 59. 1924. The specimen from New Guinea referred to *C. fissilis* by F. Mueller in Trans. Roy. Soc. Vict. 1(2): 36. 1889 belongs to *C. continua* C. B. Clarke.

Carex lamprochlamys sp. nov. (Sect. *Indicae* Tuckerm.). FIG. 2, A.

Herba robusta circa 75 cm. alta. Culmi subvalidi, acute triquetri, uninodes, glabri laevesque. Folia summam inflorescentiam haud attingentia, in apicem filiformem longe attenuata, acuta, 7–10 mm. lata, crebre striata, carinata, marginibus revoluta, supra scaberrima, subtus scabra, omnia laminifera, inferiora vaginis sanguineo-fuscis plus minusve persistentibus. Panicula plus quam dimidium culmum occupans, 7–8-nodis, composita, linearis, fere continua. Bracteae longe vaginantes vaginis pallidis ampliatis prope os antice puberulis, inflorescentiam superantes, foliiformes, summae filiformes. Paniculae secundariae 12, singulae vel binae, oblongo-ovatae laxiusculae, erectae, exserte pedunculatae, plerumque 5–9 cm. longae et 2–3.5 cm. latae. Pedunculi erecti, exserti, graciles, rigidi, striati, scaberuli. Rhachis scaberrima. Bracteolae emarginatae, arista scabra longe aristatae. Spicae pallidae ferrugineo-tinctae, androgynaeceae, oblongae vel ovoideae, plerumque 6–8 (raro 5) mm. longae, circa 5 mm. latae, parte mascula partem femineam adaequante vel ea brevior. Glumae femineae fulvae, ovatae, acutae admodum acuminatae, aristulatae, pluristriatae, circiter 2 mm. longae. Utriculi pallidi, nitidi, membranacei, 3–3.5 mm. longi, 1 mm. lati, trigoni haud inflati, nervis prominulis circiter 15 notati, inferne elliptici vel obovati basi contracti, glabri laevesque, sursum in rostrum gracile planum fere rectum vel leviter excurvum ore integrum oblique sectum marginibus admodum scabrum cetero utriculo aequilongum subabrupte contracti. Nux 2 mm. longa, 0.9 mm. lata, brunnea, ellipsoidea utrinque acuta, triquetra, apice indistincte annulata, lateribus concava, basi breviter stipitata. Stylus basi incrassatus; stigmata 3.

PAPUA: Central Division: Mafulu, *Brass* 5323 (TYPE), Sept.–Nov. 1933, alt. 1250 m., common erect ground plant in *Castanopsis* forest; Boridi, *Carr* 13160, Sept. 1935, alt. ca. 4700 ft., young secondary forest (herb. ca. 2 ft. tall) (herb. Canberra).

Kükenthal cited Brass's collection under *C. Rafflesiana* Boott var. *continua* (C. B. Clarke) Kükenth., in Bull. Jard. Bot. Buitenz. III. 16: 315. 1940, and Carr's collection under *C. indica* L., in Bot. Jahrb. 69: 262. 1938. The species differs from *C. indica* L. and its immediate allies (subsect. *Turgidulae* Kükenth.) in that the utricle is not olivaceous, is by no means inflated, and is gradually attenuated into its beak, and differs further from *C. indica* itself in that the pistillate glumes are only shortly aristate. From *C. Rafflesiana* and its allies (subsect. *Hispidulae* Kükenth.) it differs in the stouter more rigid panicle and in that the utricle is but sparsely scabrous and then only on the narrow beak. By reason of the non-inflated utricle not abruptly narrowed into its slender only slightly scabrous beak, this species seems best placed in subsect. *Gracilirostres* Kükenth., but it is readily distinguished by its pallid shining mature utricle. Carr's specimen is a somewhat immature plant with a culm about 50 cm. high and leaves about 7 mm. wide.

Carex continua C. B. Clarke in Hook. f. Fl. Brit. Ind. 6: 717. 1894.

Carex Rafflesiana Boott var. *continua* (C. B. Clarke) Kükenth. in Philip. Jour. Sci. 6: 60. 1911, in Bot. Jahrb. 59: 59. 1924, in Bull. Jard. Bot. Buitenz. III. 16: 315. 1940.

NETHERLANDS NEW GUINEA: 4 km. southwest of Bernhard Camp, Idenburg River, *Brass* 13211, March 1939, alt. 850 m., rain-forest, one clump on river-bank; 4 km. southwest of Bernhard Camp, Idenburg River, *Brass* 13722, March 1939, alt. 850 m., occasional tufts on open banks of rain-forest stream; 15 km. southwest of Bernhard Camp, Idenburg River, *Brass* 12371, Jan. 1939, alt. 1500 m., rain-forest, one clump in sandy stream-bed; 18 km. northeast of Lake Habbema, Bele River, *Brass* 11225, Nov. 1938, alt. 2300 m., Fagaceae forest, common in moist hollows, clumps 50 cm. high. PAPUA: Central Division: Near summit of Owen Stanley Range at 9200 ft., *W. MacGregor* (herb. Melbourne); Mt. Tafa, *Brass* 4842, May–September 1933, alt. 2400 m., plentiful on roadside in forest; Mt. Tafa, *Brass* 5007, May–September 1933, alt. 2400 m., common roadside species, also found occasionally on forest floor, Mt. Tafa, *Brass* 5088, alt. 2400 m., May–September 1933, scattered on thinly vegetated face of an old landslip.

Not previously recorded for Netherlands New Guinea. *Brass* 5007 was cited by Kükenthal, in Bull. Jard. Bot. Buitenz. III. 16: 315. 1940, under *C. Rafflesiana* Boott var. *continua* (C. B. Clarke) Kükenth. Kükenthal also cites *Brass* 5323, 4391, and 4623 as belonging to this form; of these *Brass* 5323 serves as the type of the abundantly distinct *C. lamprochlamys* S. T. Blake, while nos. 4391 and 4623 are referred below to *C. neoguineensis* C. B. Clarke. MacGregor's specimen was referred to *C. fissilis* Boott by F. Mueller, in Trans. Roy. Soc. Vict. 1(2): 36. 1889.

Kükenthal's earlier opinion that *C. continua* C. B. Clarke is specifically distinct from *C. Rafflesiana* Boott seems preferable to treating it as a variety of the latter. The specimens seen from New Guinea and the Philippine Islands seem to form a homogeneous series. The species extends to the eastern Himalayas.

Carex neoguineensis C. B. Clarke in Jour. Linn. Soc. Bot. 37: 12. 1904, in Kew Bull. Add. Ser. 8: 73. 1908; Kükenth. in Pflanzenr. IV.20: 280. 1909, in Bot. Jahrb. 59: 59. 1924; Suring. in Nova Guinea Bot. 8: 713. 1912; Ridl. in Trans. Linn. Soc. II. Bot. 9: 246. 1916.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass* 9210, August 1938, alt. 3225 m., associated with *Sphagnum* and grasses in shrubby edges of forest; 9 km. northeast of Lake Habbema, *Brass* 10882, October 1938, alt. 2650 m., wet bank of an open stream in forest; 9 km. northeast of Lake Habbema, *Brass* 10925, October 1938, alt. 2800 m., common on wet sandy soil of openings in forest. PAPUA: Central Division: Mt. Albert Edward, *Brass* 4391, May–July 1933, alt. 3600 m., small colony on an open grassland slope (inflorescence brown); Mt. Victoria, *W. MacGregor* in 1889 (herb. Melbourne); Murray Pass, Wharton Range, *Brass* 4623, June–September 1933, alt. 2840 m., common on grasslands and recently burnt areas (leaves pale green, inflorescence brown); lower regions of British New Guinea, *W. MacGregor* in 1894 (herb. Melbourne).

The specimens cited show some variation between one another, particularly as to the size of the utricle. *Brass* 9210 and 4623 have small utricles 2.5–2.8 mm. long, while on *Brass* 10882 and *MacGregor*'s specimens the utricles are 2.7–3.5 mm. long with longer more slender beaks. The type-specimen is described as having utricles 3 mm. long with the beak prominently toothed at the tip. All our specimens have an entire or emarginate tip of the utricle. Mr. E. Nelmes does not mention this character, but tells me that apart from the size and rather stouter beak the utricle of *Brass* 9210 is rather similar to that of the type and that the glumes are much alike. In view of the variation on Brass's specimens I

now have no hesitation in referring all the above-cited specimens to Clarke's species.

MacGregor's specimens have coarser leaves up to 10 mm. wide and the partial panicles sometimes paired, but the material is rather scrappy.

As mentioned in the discussion following *C. continua* above, *Brass* 4623 and 4391 were determined by Kükenthal as *C. Rafflesiana* Boott var. *continua* (C. B. Clarke) Kükenth. *Carex neoguineensis* is undoubtedly closely allied to *C. continua*, but it has more loosely flowered spikes with the utricles more abruptly contracted into a more slender trigonous prominently decurved beak, while the shorter stiffer leaves and bracts (the former usually not exceeding the base of the inflorescence, the latter only about as long as the partial panicles) and the shortly aristulate to muticous bracteoles give a different *facies* to the species.

Carex melanophora sp. nov. (Sect. *Indicae* Tuckerm. subsect. *Hispidulae* Kükenth.).

FIG. 2, B.

Herba stolonifera usque ad 4 dm. alta; stolones graciles usque ad 2.5 mm. crassi, squamis brunneis vel fuscis persistentibus obtecti. Culmi solitarii vel caespitosi, graciles, enodes, obtuse trigoni, striati ceterum laeves vel fere laeves, glabri. Folia prope basin culmi conferta, numerosa, recta, summam inflorescentiam fere attingentia, 2-3 mm. lata, apicem triquetrum versus longe attenuata, pro maiore parte plana vel marginibus recurvula, conspicue carinata, crebre nervosa, costa supra appresse scabro-pubescentia ceterum glabra, marginibus (mediis exceptis) scaberula, carina sursum scabra, emortua persistentia; vaginae atropurpureae vel fuscae tandem in fibras dissolutae. Panicula composita, $\frac{1}{2}$ - $\frac{2}{3}$ plantae occupans, linearis, densa, basi interrupta. Paniculae secundariae 14, plerumque binae, fuscae, oblongae vel anguste oblongae, dense spiciformes, plerumque 1-2.5 cm. longae, 5-7 mm. latae, superiores subsessiles approximatae, inferiores prominule pedunculatae, ima plus minusve distans solitaria. Bractee paniculas secundarias suas (interdum etiam inflorescentiam totam) superantes, superiores setaceae, inferiores foliiformes longiuscule vaginantes vaginis arctis antice tenuiter breviterque pubescentibus. Bracteolae squamiformes, aristatae, plus minusve hispidae. Pedunculi filiformes, erecti, scabri, imus usque ad 8 cm. longus. Rhachis scabra. Spicae androgynae, subapproximatae, appressae, oblongae, 4-6 mm. longae, 2-2.5 mm. latae; pars mascula partem feminam circa adaequans sed (utriculis circumdata) inconspicua. Glumae femineae sanguineo-fuscae, ovatae, acutae, muticae vel plus minusve cuspidatae, 2.5-3 mm. longae, tenuiter 5-nerves, carina tenui straminea. Utriculi fusci vel sanguineo-fusci, erecti, 3.5-3.8 mm. longi, 0.9-1 mm. lati, elliptici, utrinque angustati, subaeque subacuteque trigoni, nervis 6-8 tenuibus (quorum interdum 2 solis conspicuis) notati, appresse scabro-pubescentes, marginibus hispiduli, in rostrum sensim abeuntes; rostrum rectum cetero utriculo aequilongum vel fere aequilongum, subgracile, compressum, ore albo-marginato profunde bidentatum (dentibus strictis), marginibus scabrum. Nux arcta, elliptica, stipitata, conspicue apiculata, acute triquetra lateribus concava, stramineo-brunnea, 1.6 mm. longa, 0.8 mm. lata. Stylus basi haud incrassatus; stigmata 3.

NETHERLANDS NEW GUINEA: North slopes of Mt. Wilhelmina, *Brass & Myer-Drees* 10046, Sept. 1938, alt. 3950 m., wet places in alpine grassland, common; northern

slopes of Mt. Wilhelmina, *Brass & Myer-Drees 10080*, Sept. 1938, alt. 3950 m., alpine grassland, matted on a rock; Mt. Wilhelmina, 7 km. northeast of top, *Brass & Myer-Drees 9828* (TYPE), Sept. 1938, alt. 3560 m., abundant on moist grassy cliffs.

Carex melanophora is evidently close to *C. sarawaketensis* Kükenth., but differs in the nodeless smooth stems, smaller partial panicles, smaller spikes, longer and perhaps more distinctly nerved utricles which are scabrous rather than hispid except on the margins of the beak, and perhaps also in the development of stolons. The three collections cited above are unlike each other at first glance, but they are indistinguishable as to their spikelets and appear to reflect differences of habitat. All specimens show at least a piece of a stolon. The type-sheet consists of two pieces 3 and 4 dm. high with narrow partial panicles the lower of which are distant and long-peduncled. *Brass & Myer-Drees 10080* consists of tiny plants up to 5 cm. high; they are immature but evidently represent starved plants. The third collection is intermediate with plants 7–13 cm. high, not quite mature, with fairly dense inflorescences with the lower partial panicles shortly pedunculate and thicker than in the type. The utricles are somewhat larger than in the type, 4–4.5 mm. long and 1.1–1.2 mm. wide. It would appear that the usual length of the utricle of the species varies from 3.5 to 4.2 mm.

Carex rhizomatosa Steud. in Zoll. Verz. Ind. Archip. 60:1854; Kükenth. in Bot. Jahrb. 59:60. 1924, 69:264. 1938, in Bull. Jard. Bot. Buitenz. III. 16:316. 1940.

PAPUA: Central Division: Mafulu, *Brass 5318*, Sept.–Nov. 1933, alt. 1250 m., common amongst tall grass of deforested spurs.

This collection differs from the general run of the species in the somewhat smaller nearly smooth utricles 2.5 mm. long. It was previously cited by Kükenthal in Bull. Jard. Bot. Buitenz., l. c. The species ranges from Assam and Burma to New Guinea.

Subgen. *Eucarex* Coss. & Germ.

Carex Gaudichaudiana Kunth, Enum. 2:417. 1837; Ohwi in Bot. Mag. Tokyo 56:215. 1942.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass 9234*, August 1938, alt. 3225 m., common on marshy banks of streams; Mt. Wilhelmina, 7 km. northeast of top, *Brass & Myer-Drees 9923*, Sept. 1938, alt. 3700 m., few plants on boggy grasslands.

The specimens are small and immature, corresponding to var. *humilior*. Kükenth. in Pflanzenr. IV.20:313. 1909, which was recorded for Northeast New Guinea in Bot. Jahrb. 69:264. 1938. To judge from the range of variation seen in Australian plants this small state is not worth taxonomic recognition. The species occurs in southeastern Australia (including Tasmania) and New Zealand and was recently recorded for Netherlands New Guinea by Ohwi, l. c.

Carex phacota Spreng. Syst. 3:826. 1826; Ohwi in Bot. Mag. Tokyo 56:214. 1942.

PAPUA: Eastern Division: Summit of Mt. Dayman (herb. Melbourne, without further data).

New for Papua; recorded by Ohwi, l. c., for Netherlands New Guinea, otherwise known from Nepal and Japan to Java. The sheet carries an old

herbarium label marked in the handwriting of F. Mueller "Carex Summit of Mt. Dayman," to which J. H. Willis has added "New Guinea (ca. 1894)."

Carex euphlebia sp. nov. (Sect. *Acutae* Fries). FIG. 3, C.

Herba dense caespitosa rhizomate brevi. Culmi caespitosi, cum inflorescentia 30–65 cm. alti, graciles, acute triquetri, sursum scabridi, usque ad medium foliati, basi vaginis nigricantibus nitidulis obtecti. Folia coriacea, inflorescentiam longe superantia, 2.5–5.5 (pro more 3–5.5) mm. lata, in apicem acutum fere planum scabrum longe attenuata, plerumque plana sed marginibus scaberrimis plus minusve recurva vel revoluta, nervis primariis scabra; vagina summa perlonga, inferiores persistentes, intermediae tandem in fibras plus minusve reticulatas fissae. Bractee evaginantes, 2–3 inferiores foliiformes inflorescentiam superantes, ceterae breviores, summae squamiformes. Pedunculi capillares, tenaci-flexiles, angulis scabri, imus usque ad 5 cm. longus. Spicae 10–14, singulatim dispositae, vix distantes, lineari-cylindricae, atro-fuscae, densiflorae, inferiores pedunculatae plus minusve nutantes, superiores sessiles patulae; terminalis mascula, interdum basi breviter feminea, 5–12 mm. longa; ceterae androgynae, 2–6 (plerumque 3–5.5) cm. longae, 4.5–5 mm. crassae, in $\frac{1}{4}$ – $\frac{1}{2}$ partem superiorem masculam, circiter 1.5 mm. crassam, abrupte angustatae. Glumae femineae violaceo-nigrae, dorso viridulo 3-nerves, margine angustissime albo-hyalinae, 1.5–1.8 mm. longae, oblongo-ovatae, plus minusve obtusae, cuspidate plana scabra glumam fere adaequante vel ea breviorae praeditae. Utriculi pallide brunnei, glumam superantes vel multo superantes, 1.8–2.2 mm. longi, 0.9–1 mm. lati, tandem divaricati, biconvexi, elliptici utrinque acuti vel apice breviter subacuminati, ore minute truncati vel emarginati, 14–16-costati, sursum punctulati ceterum laeves, glabri. Nux utriculo breviorae aequilatae, ellipticae, biconvexae, brunneae, circiter 1.4 mm. longae. Stylus exsertus; stigmata 2.

NETHERLANDS NEW GUINEA: 9 km. northeast of Lake Habbema, *Brass* 10877 (TYPE), October 1938, alt. 2650 m., common on open banks of a stream; 9 km. northeast of Lake Habbema, *Brass* 10559, October 1938, alt. 2800 m., few scattered clumps in stony bed of stream; 9 km. northeast of Lake Habbema, *Brass* 10734, October 1938, alt. 2800 m., common about native huts on open banks of stream, etc., clumps 50–60 cm. high. PAPUA: Central Division: Mt. Albert Edward, *Brass* 4386, May–July 1933, alt. 3800 m., amongst coarse tussock grass on deforested slope (stiff sedge in broad spreading tussocks).

Brass 4386 was determined by Kükenthal, in *Bot. Jahrb.* 69: 264. 1938, as *C. Graeffeana* Boott, from which it differs in the narrower leaves, fewer shorter coarser spikes, and rather longer utricles acute at the base and with more numerous nerves. It appears to be closely allied to *C. Pandanus* Ohwi, in *Bot. Mag. Tokyo* 56: 214. 1942, from Netherlands New Guinea, but has much longer leaves with more persistent sheaths, commonly cuspidate glumes, and darker coloured, rather smaller, elliptical (not obovate) utricles punctulate in the upper part. It is also close to *C. philippinensis* Nelmes, in *Kew Bull.* 1938: 109. 1938, differing in that the terminal spike is usually male, in the rather more slender spikes, in the ovate rather than obovate glumes, and in the smaller elliptical (not obovate) smooth paler coloured utricle which is less obtuse at the base.

On the type specimen, selected as such because of its full maturity,

there are 13 spikes and the glumes are muticous or shortly pointed. *Brass* 10734 measures 22 cm. to the top of the inflorescence and has 10 spikes rather shorter than those on the type (up to 3.5 cm. long), with which it otherwise agrees. *Brass* 4386 is similar to the type in appearance, but is not quite so mature; it carries 10 spikes and the glumes are rather prominently awned. *Brass* 10559, also with 10 spikes, is immature, and the uppermost spike has a few female flowers at the base.

Carex montivaga nom. nov.

Carex bulbostylis Kükenth. in Bot. Jahrb. 69: 264. 1938; non Mackenzie in Bull. Torr. Bot. Club 42: 617. 1915.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass* 9032, August 1938, alt. 3225 m., common on wet sandy soil of open ridges; Lake Habbema, *Brass* 9339, August 1938, alt. 3225 m., common on sandy patches on wet grassy slopes; Lake Habbema, *Brass* 9582, August 1938, alt. 3225 m., alpine grassland, tufted in a sandy pool; 11

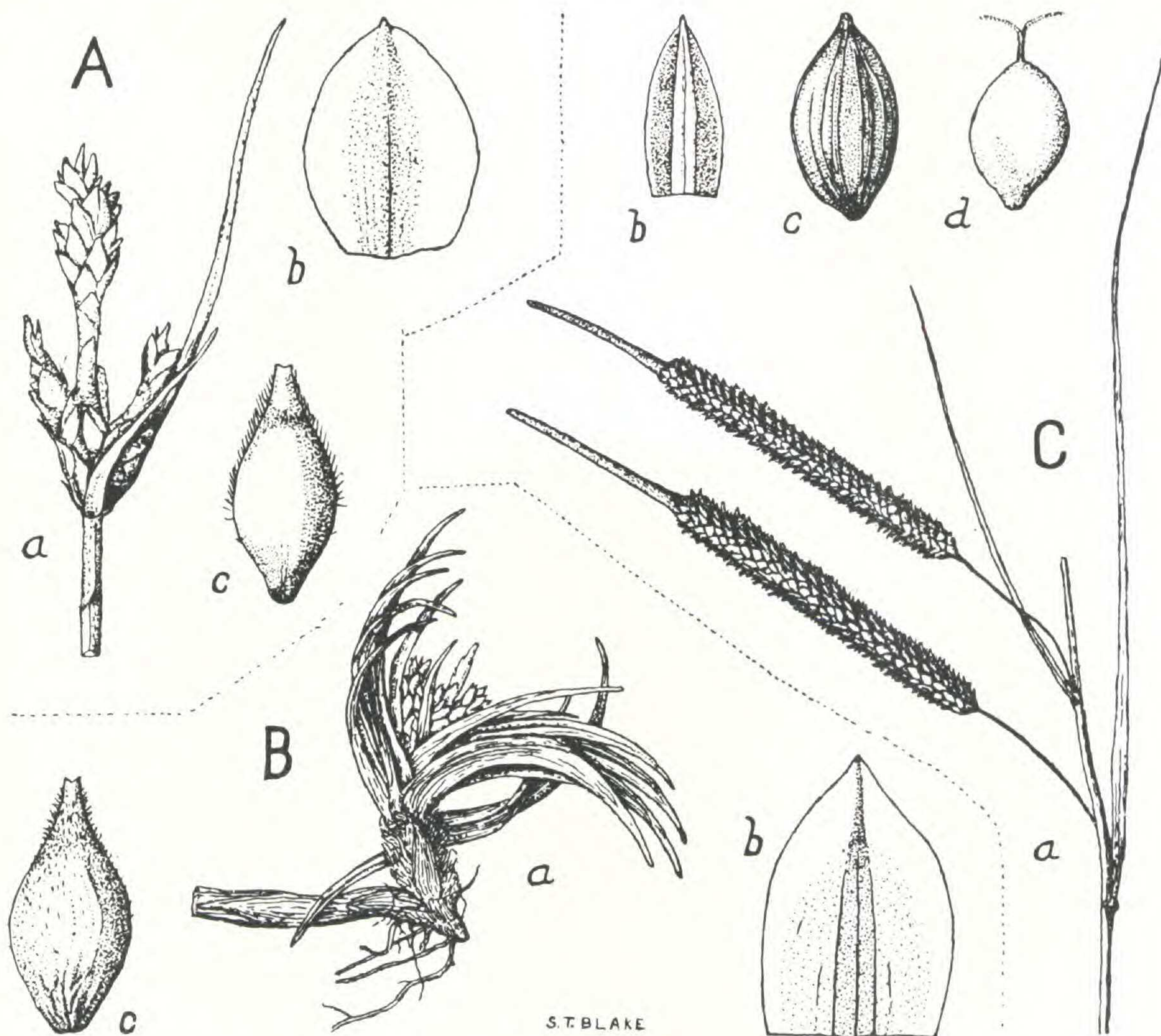


FIG. 3. A. *Carex tricholoma* S. T. Blake: a. apex of culm with inflorescence, $\times 2$; b. pistillate glume, flattened out, $\times 10$; c. nut, $\times 10$. B. *Carex brevis* S. T. Blake: portion of plant, $\times 1$; b. pistillate glume, flattened out, $\times 10$; c. utricle, dorsal view, $\times 10$. C. *Carex euphlebica* S. T. Blake: a. portion of middle part of inflorescence, $\times 1$; b. pistillate glume, flattened out, $\times 10$; c. utricle, dorsal view, $\times 10$; d. nut with style, $\times 10$. Fig. A, a from *Brass* 4274; remainder from type-specimens.

km. northeast of top of Mt. Wilhelmina, *Brass & Myer-Drees 9759*, Sept. 1938, alt. 3450 m., in small bog.

Kükenthal based his species on part of *Clemens 6069*, from Sarawaket in Northeast New Guinea. I have not seen the material, but the specimens cited above, particularly *Brass 9339*, agree so well with the description that there seems no doubt they are conspecific. The following notes on these specimens may be regarded as an amplification of the original description: Culms 18–42 cm. high; spikes 3–4, the terminal one male and 8–12 mm. long, the others female and up to 12 mm. long (8–12 mm. on Brass's specimens, 6–10 mm. on the type); the lowermost bract occasionally has a very short sheath; and the utricles vary from 3 to 3.6 mm. long.

Carex tricholoma sp. nov. (Sect. *Mitratae* Kükenth.). FIG. 3, A.

Carex bulbostylis Kükenth. var. *ciliato-marginata* Kükenth. in Bull. Jard. Bot. Buitenz. III. 16: 318. 1940, in Bot. Jahrb. 70: 464. 1940; non *C. ciliato-marginata* Nakai.

Rhizoma breve. Culmi caespitiosi, circa 15–30 cm. alti, graciles, trigoni, striati, prope apicem subtiliter scabri vel laeves, prope basin foliati. Folia omnia laminifera, culmo multo breviora, rigida, suberecta, sursum gradatim angustata sed apice ipsa anguste praemorsa, conspicue carinata, marginibus recurva ceterum plana, prope apicem triquetra, carina et marginibus et facie superiore scabra; vaginae brunneae, hirtellae, emortuae in fibras reticulatas dissolutae. Bractea ima inflorescentiam adaequans, angusta sed vix setacea, breviter vaginans, ceterae breves vel squamiformes. Spicae 3–4, brunneae, contiguae vel ima breviter distans, sessiles vel breviter pedunculatae, interdum etiam spica basali longissime pedunculata addita; terminalis gynaeandra, clavata, circiter 10–12 mm. longa, inferne circiter 1.5 mm. sursum 3–4 mm. crassa; laterales femineae, oblongo-cylindricae, 7–10 mm. longae, circiter 3 mm. crassae, densiflorae. Glumae femineae 2–2.3 mm. longae, late ovatae, obtusae vel fere obtusae, muticae vel cuspidulatae, brunneae, dorso pallidae subtiliter 1-nerves, marginibus anguste hyalinae. Utriculi glumam brevissime superantes, 2.3–2.5 mm. longi, 0.95 mm. lati, membranacei, straminei nervis valde obscuris, marginibus lateralibus manifeste ciliati, faciebus glabri laevesque, elliptici, trigoni angulis lateralibus conspicuis, in rostrum breve conicum brunneum ore fulvescente minute bidentulum marginibus ciliatum sensim contracti. Nux cinerea, 1.5 mm. longa, 0.9 mm. lata, oblongo-ovalis obtuse trigona, anguste tricostulata, lateribus convexa, sub apice annulata constricta. Stylus brevissimus, basi pyramidalis; stigmata 3.

PAPUA: Central Division: Mt. Albert Edward, *Brass 4274*, May–July 1933, alt. 3680 m., few plants amongst grass on banks of a grassland pond; Mt. Albert Edward, *Brass 4316* (TYPE), May–July 1933, 3680 m., sporadic in forest glades, not common.

Carex tricholoma differs from *C. montivaga* S. T. Blake (*C. bulbostylis* Kükenth. non Mackenzie) in the broader more scabrous leaves, prominently sheathing lowermost bract, gynaeandrous terminal spike, and in the smaller very shortly beaked utricle prominently ciliate on the lateral margins nearly throughout its length. Kükenthal founded his variety solely on *Brass 4316* and I have accepted a specimen of this number as the type of the species described above, but the excellent specimen *Brass 4274* was found useful in elucidating some of the details.

A small plant in herb. Brisbane collected by M. S. Clemens on Mt. Sarawaket, at 9–13000 ft. in April 1937, may belong to this species, but the specimen is not sufficiently satisfactory for definite determination.

Carex brevis sp. nov. (Sect. *Mitratae* Kükenth.). FIG. 3, B.

Carex bulbostylis Kükenth. var. *hispidula* Kükenth. in Bull. Jard. Bot. Buitenz. III. 16: 318. 1940, in Bot. Jahrb. 70: 464. 1940; non *C. hispidula* Gaud.

Herba humilis caespitosa; rhizoma oblique descendens lignosum. Culmi (inflorescentia inclusa) circiter 2–5 cm. alti, sub inflorescentia vaginis foliorum obtecti, basi admodum incrassati. Folia multa, rigida, patula vel admodum decurva, stricta vel plus minusve curva culmis multo longiora, sensim acutata, transversim secta plerumque V-formia, apice triquetra angustissime obtusa, 2–5.5 cm. longa, 3–4 mm. lata, valde striata, inferne carina marginibusque dense subtiliterque scabra, sursum undique scabra; vaginae brunneae tandem in fibras plus minusve reticulatas dissolutae. Bracteae foliiformes inflorescentiam superantes, conspicue vaginantes, vaginis antice admodum pubescentes, superiores angustiores. Spicae 4 approximatae, breviter pedunculatae, erectae, pallide brunneae vel fulvescentes; terminalis mascula linearis 7–8 mm. longa, 1.5 mm. lata; laterales femineae, singulae, oblongae, 5.5–8 mm. longae, circiter 3 mm. latae, subdensiflorae, interdum spicis basalibus longepedunculatis additis. Pedunculi graciles scaberuli. Glumae femineae tenuiter membranaceae, 2.4–2.5 mm. longae, 1.8 mm. latae, ovatae, obtusae vel acutae, muticae, concavae, dorso lutescenti tenuiter 3-nerves vix carinatae, lateribus hyalinae fulvo-tinctae; glumae masculae plus minusve acutae, inferiores carina scabrae. Utriculi fulvi, coriacei, 2.5–2.6 mm. longi, 1.15 mm. lati, obscure nervati (nervis lateralibus saepe etiam 2 alioribus prominulis), apice basique exceptis undique dense hispiduli, elliptici, obtuse trigoni, basi leviter rotundati, sursum in rostrum brevissimum conicum ore hyalinum sensim contracti. Nux straminea, 1.5 mm. longa, 0.9 mm. lata, ovoidea, obtusa, sub apice annulata abrupte constricta, subtiliter 3-costata, lateribus fere plana. Stylus basi pyramidalis; stigmata 3.

PAPUA: Central Division: Mt. Albert Edward, *Brass 4418* (TYPE), May–July 1933, alt. 3680 m., common in small tufts on a barren rocky ridge crest (leaves very stiff).

Described by Kükenthal as a variety of *C. bulbostylis* Kükenth. non Mackenzie (*C. montivaga* S. T. Blake), but it differs greatly from that species in appearance, in the stiffer broad leaves, included culms, sheathing bracts, pedunculate female spikes with muticous glumes (usually not muticous in *C. montivaga*), and rather shorter very shortly beaked densely hispidulous yellowish utricles. The rhachilla is well developed and is sometimes so long as to be exerted from the utricle when it bears another utricle, sometimes well developed, sometimes rudimentary. At times the glumes appear cuspidate due to the inrolling of their upper margins.

In Bull. Jard. Bot. Buitenz. III. 16: 318. 1940, Kükenthal cites three collections under his *C. bulbostylis* var. *hispidula*, namely *J. & M. S. Clemens 29005* and *Clemens 32344* from Borneo and *Brass 4418*, without designating the type. In the same year, in Bot. Jahrb. 70: 464, the same description is given, but the collections are cited as follows:

“Südöstl. Neu-Guinea: Mt. Albert Edward (*Brass n. 4418!*).

Area: Brit. Nordborneo, Mt. Kinabalu (*Clemens n. 29005!; 32344!*).”

Under these circumstances we may consider that in the latter publication Kükenthal emphasised that *Brass 4418* represented his variety, so that this may be regarded as the type of his trinomial. I have not seen the Clemens specimens. In any case the type of the binomial *C. brevis* is the sheet of specimens of *Brass 4418* in herb. Brisbane.

Carex breviculmis R. Br. Prodr. 242. 1810; Ridl. in Trans. Linn. Soc. II. Bot. 9: 247. 1916.

Carex breviculmis R. Br. subsp. *Royleana* Nees ex Wight sensu Kükenth. in Bull. Jard. Bot. Buitenz. III. 16: 318. 1940, in Bot. Jahrb. 70: 464. 1940.

PAPUA: Central Division: Murray Pass, Wharton Range, *Brass 4697*, June–Sept. 1933, alt. 2840 m., pale species scattered on grassland slopes.

I do not see how these specimens differ from the general trend of the species in Eastern Australia, unless the utricles are somewhat less pubescent. The length of culm varies considerably, sometimes even on the same plant, and evidently has no taxonomic importance in this species. I have seen no authentic specimen of subsp. *Royleana*, which is said to have somewhat scabrous culms; the other characters described are to be found in characteristic *C. breviculmis*.

Carex constricta sp. nov. (Sect. *Frigidae* Fries subsect. *Decorae* Kükenth.). FIG. 4, A.

Herba pygmaea caespitosa stolonifera phyllopora. Culmus 4 cm. altus, intra folia absconditus et horum vaginis obtectus. Folia numerosa, culmum superantia, usque ad 5 cm. longa, 2–3 mm. lata, plana, sensim acuta, perrigida, carinata, sursum carina marginibusque scabra; vaginae purpurascens diu integrae sed tandem in fibras fissae. Inflorescentia e spicis 6 erectis constructa; spica terminalis mascula linearis circiter 7 mm. longa et 1.2 mm. crassa, breviter pedunculata; spicae laterales femineae, ima excepta geminatae, oblongae, subdensiflorae, 5–11 mm. longae, sub fructu 3.5–4 mm. crassae, breviter pedunculatae pedunculis e vaginis haud vel vix exsertis. Bractae inflorescentiam superantes, foliiformes, prominule vaginantes. Glumae femineae oblongo-ovatae, truncatae vel bilobae, aristulatae, carina angusta basi 3-nervi virides, lateribus rufescentes aut ferrugineae, marginibus anguste hyalinae, 2.2–2.5 mm. longae (aristula usque ad 0.3 mm. longa inclusa). Utriculi oblique patentes, 2.3–2.6 mm. longi, circiter 1 mm. lati, membranacei, acute triquetri, leviter compressi, lateribus fere plani, 2-nervi, glabri, minute rugulosi nitidule fusco-olivacei, inferne elliptici basin versus attenuati, sursum in rostrum obliquum circiter 0.7 mm. longum marginibus scabrum ore hyalinum obliquum integrum vel bidentulum subabrupte contracti. Nux arcte inclusa, fere atra, ellipsoideo-ovoidea, tricostata, lateribus convexa, sub apicem ipsum dilatatum annulatum constricta. Stylus basi incrassatus; stigmata 3.

PAPUA: Central Division: Mt. Victoria, Owen Stanley Range, *W. MacGregor* in 1889 (TYPE in herb. Melbourne; photographs of specimen with analytical drawings in herbs. Gray, Brisbane, and Kew).

A single piece seen with one fruiting culm. In habit it appears to be close to *C. celebica* Kükenth., differing (so far as can be judged from the description) in the truncate mucronate (not acute) glumes and coarser spikes with more spreading utricles. Kükenthal describes the spike of *C. celebica* as 1½ mm. thick, but it is not clear whether this refers to the

flowering or the fruiting spike. The nut of *C. constricta* is similar to that of the *Mitratae*, but the geminate spikes and shape of the glumes do not accord with this section.

Carex tricuspidata Kükenth. in Bot. Jahrb. 70: 466. 1940.

NETHERLANDS NEW GUINEA: Mt. Wilhelmina, 4 km. northeast of top, *Brass & Myer-Drees 9970*, Sept. 1938, alt. 3650 m., tufted on grassy seepages; Mt. Wilhelmina, 11 km. northeast of top, *Brass & Myer-Drees 9803*, Sept. 1938, alt. 3400 m., covering the sandy bottom of a stream.

Previously known only from Northeast New Guinea. The specimens cited evidently belong to Kükenthal's species, though collectively they

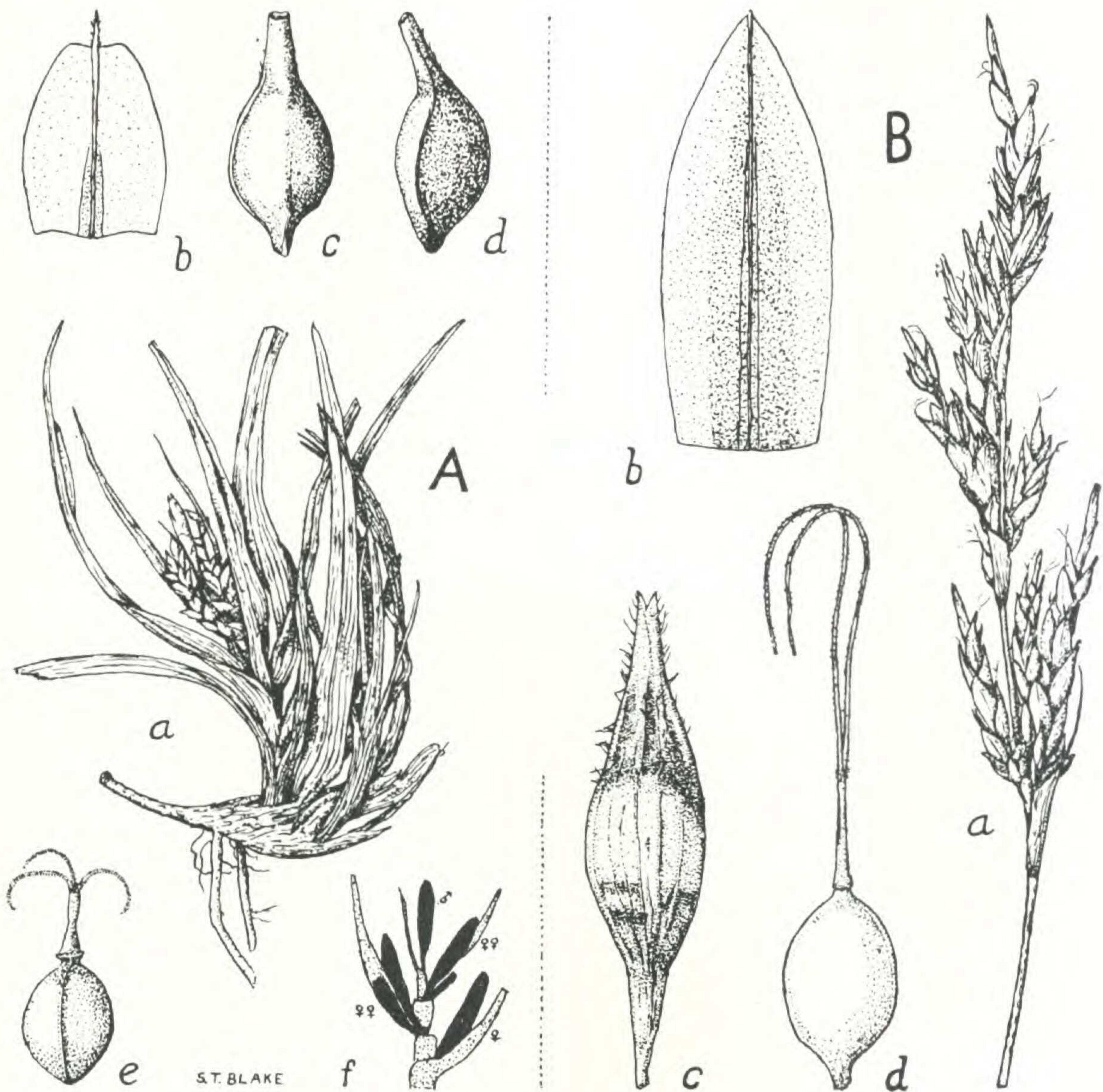


FIG. 4. A. *Carex constricta* S. T. Blake: *a.* plant, $\times 1$; *b.* pistillate glume, flattened out, $\times 10$; *c.*, *d.* utricle, dorsal and lateral views, $\times 10$; *e.* nut with style, $\times 10$; *f.* diagram of inflorescence (spikes in solid black, bracts stippled). B. *Carex acrophila* S. T. Blake: *a.* upper part of inflorescence, $\times 1$; *b.* pistillate glume, flattened type-specimens.

differ from the description in that the spikes are up to 6 cm. long, sometimes all distinct from one another (not up to 4 cm. long with the two uppermost female ones fastigate), in that the utricle is only about 3.5 mm. (3.3–3.6 mm.) and not 4 mm. long, and in that the basal leaf-sheaths ultimately break up into fibres, while an elongated rhizome appears sometimes to be present. The inflorescence of *Brass & Myer-Drees 9970* agrees pretty well with Kükenthal's description, but on this specimen the basal sheaths are broken up into fibres. In the other collection the plants are more elongated with longer and more distant spikes. The basal leaf-sheaths are but little disintegrated and evidence of an elongated rhizome is present.

Carex brunnea Thunb. Fl. Japon. 38. 1784; Kükenth. in Bot. Jahrb. 59: 60. 1924, 69: 265. 1938.

NETHERLANDS NEW GUINEA: 9 km. northeast of Lake Habbema, *Brass 10924*, October 1938, alt. 2800 m., shrubby edges of a land-slip, rare; Bele River, 18 km. northeast of Lake Habbema, *Brass 11592*, Nov. 1938, alt. 2200 m., occasional large clumps on grassy, formerly cultivated slopes.

New for Netherlands New Guinea, previously recorded from Northeast New Guinea. Known from the Mascarene Islands, Ceylon, E. Asia and Japan, Indo-Malaya, Queensland, N. S. Wales, and New Caledonia.

Carex acrophila sp. nov. (Sect. *Hymenochlaenae* Drejer subsect. *Graciles* Tuckerm.).

FIG. 4, B.

Rhizoma brevissimum. Culmi caespitiosi, erecti, cum inflorescentia 25–60 cm. alti, gracillimi (usque ad 0.9 mm. crassi), obtuse trigoni, sursum angulis admodum scaberuli, glabri, enodes, basi solum foliati. Folia prope basin culmi stipata, inflorescentiam superantia, rigida, stricta vel prope apicem flexuosa, plerumque laxe conduplicata, valde carinata, explanata usque ad 1.6 mm. lata, in apicem longe filiformem sensim attenuata, ad superficiem superam atque ad margines atque ad carinam superam debiliter laxiusculeque scabro-pilosula; vaginae fusco-brunneae vel fuscae, lucidulae, plerumque integrae, imae elaminatae. Panicula simplex, 7–15 cm. longa. Bractee setaceae, breves, summam inflorescentiam raro attingentes, longe vaginantes, vaginis clare brunneis. Spicae 12–20, saturate brunneae, plerumque ternae vel binae (interdum singula), breviter pedunculatae, androgynae (pars mascula parte feminea brevior angustiorque), lineari-cylindricae, plerumque 1.5–3.5 cm. longae, 3 mm. crassae, subdensiflorae. Glumae femineae 4.5–5.5 mm. longae, elliptico-oblongae, acutae, muticae vel aristulatae, ferrugineae marginibus anguste hyalinae, dorso crebre 3-nerves anguste carinatae, lateribus striatae. Utriculi suberecti glumas superantes, saturate rufo-brunnei, 5–5.5 mm. longi, 1–1.2 mm. lati, membranacei, nervis circiter 15 notati, praecipue parte superiore marginibusque hispidi, angustius ovoidei, plano-convexi, inferne in stipitem graciliorem 1–1.4 mm. longum conspicue angustati, sursum in rostrum gracile fuscum bidentulum circiter 1.3 mm. longum subsensim contracti. Nux utriculo multo brevior, late elliptico-oblonga, plano-convexa, 1.75–2 mm. longa, 1.2 mm. lata, brunnea. Stylus tenuis, basi admodum incrassatus; stigmata 2, circiter 5 mm. longa.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass 9515* (TYPE), August 1938, alt. 3225 m., common about native camps; northern slopes of Mt. Wilhelmina, *Brass & Myer-Drees 10072*, Sept. 1938, alt. 4050 m., common on old grassy screes; Mt.

Wilhelmina, 7 km. northeast of top, *Brass & Myer-Drees 9829*, Sept. 1938, alt. 3560 m., alpine grassland, occasional erect tufts on wet ground; Mt. Wilhelmina, 7 km. northeast of top, *Brass & Myer-Drees 9926*, Sept. 1938, alt. 3560 m., plentiful amongst long grasses of a marshy slope, slender tufts 70–90 cm. high; Mt. Wilhelmina, 5 miles east of top, *Brass 9409*, August 1938, alt. 3440 m., common in marshy hollows.

This may be the form described by Kükenthal as *C. brunnea* Thunb. var. *subteiogyna* Kükenth., in Rep. Sp. Nov. 8: 8. 1910, from the Philippine Islands (not *C. subteinogyna* Ohwi in Mem. Coll. Sci. Kyoto Imper. Univ. ser. B, 11(5): 469, pl. 15, text-fig. 17. 1936), but it differs from *C. brunnea* in the nearly smooth rigid less flattened narrower leaves, the short peduncles, the longer glumes, the longer long-stipitate utricles less suddenly contracted into the beak and in the nut much shorter than the utricle. *Carex acrophila* is closely allied to *C. teinogyna* Boott, from India and Burma, but differs in the denser inflorescence, the shorter peduncles, the utricles with a longer stipe and more gradually narrowed to a shorter beak with shorter teeth, the shorter nut and rather shorter stigmas. It is also evidently close to *C. spathaceo-bracteata* Kükenth., in Bot. Jahrb. 70: 466. 1940, from Northeast New Guinea, differing in the less rough stems and leaves, 2–3-nate (not 3–5-nate) spikes, longer not conspicuously dilated sheaths to the bracts, paler glumes, and larger utricles hispid on the sides as well as on the margins.

The cited collections form a very homogeneous series, varying from one another almost exclusively in the height of the plant. The nut is occasionally subtrigonal.

Carex Brownii Tuckerm. Enum. Meth. 21. 1843.

NETHERLANDS NEW GUINEA: Balim River, *Brass 11791*, Dec. 1938, alt. 1600 m., frequent in shallow grassy pools, erect tufts 50–60 cm. high.

New for New Guinea; known elsewhere from Japan, Korea, New South Wales, and New Zealand.

Carex subtransversa C. B. Clarke in Philip. Jour. Sci. 2(C): 108. 1907.

PAPUA: Central Division: Murray Pass, Wharton Range, *Brass 4676*, June–Sept. 1933, alt. 2840 m., a few plants at edge of forest (leaves pale, inflorescence erect).

New for New Guinea; previously known from the Philippine Islands and Japan.

Carex Doniana Spreng. Syst. 3: 825. 1826.

PAPUA: Central Division: The Gap, *Carr 13731*, Dec. 1935, alt. 7200 ft., open ridge top (herb, 1 ft. tall) (herb. Canberra).

New for New Guinea. This collection was cited along with *Clemens 4451* and *Clemens 5551* under the original description of *C. japonica* Thunb. var. *mesogyna* Kükenth., in Bot. Jahrb. 69: 265. 1938, but it differs from the description in that the terminal spike is wholly male, not female in the middle. It matches one piece of *Ramos & Edaño in Philip. Bur. Sci. 40359*. There are two pieces under this number in herb. Brisbane, apparently representing the same form, the larger one agreeing with Kükenthal's description of *C. japonica* Thunb. var. *chlorostachys* Kükenth., the second piece, matched by the Carr sheet, being smaller and with narrower leaves. *Carex Doniana* appears to be sufficiently distinct from *C. japonica* Thunb.

by reason of the longer cylindrical more shortly pedunculate always erect spikes and usually broader leaves.

Carex subtransversa C. B. Clarke is very similar in appearance to *C. Doniana*, but has less spreading rather broader less distinctly nerved utricles with rather longer beaks, and the style is oblique and scarcely swollen at the base.

Carex fascicularis Soland. ex Hook. f. Fl. Nov. Zel. 1: 283. 1853.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass 9211*, August 1938, alt. 3225 m., lining open lake-shores, on hummocked marshy ground, large erect clumps 60–100 cm. high.

New for New Guinea; previously known only from eastern Australia and New Zealand.

There remain three collections of which the specimens are not sufficiently complete for satisfactory determination. *Brass 9235*, from sunny bogs, Lake Habbema, 3225 m., consists of small plants evidently allied to *C. stenophylla* Wahlenb., of the Northern Hemisphere, but the utricles are far too undeveloped for certain determination. *Brass 11540*, from the open banks of the Bele River, 2200 m., is an *Indocarex* allied to *C. filicina* Nees and *C. saturata* C. B. Clarke. It almost certainly represents an undescribed species, but as the most advanced utricles are not quite mature it seems inadvisable to attempt to describe it until more mature material is available. And finally, *Brass 4407*, from a broken cliff face on Mt. Albert Edward at 3680 m., appears to represent an undescribed species of the *Mitratae*, but only very immature flowers and one overmature utricle are present on the specimen.

QUEENSLAND HERBARIUM,
BRISBANE, QUEENSLAND, AUSTRALIA.